Speedfit®

The Push-fit Solution for Plumbing and Heating Systems

UNDERFLOOR HEATING SYSTEMS

DETAILS AND NOTES

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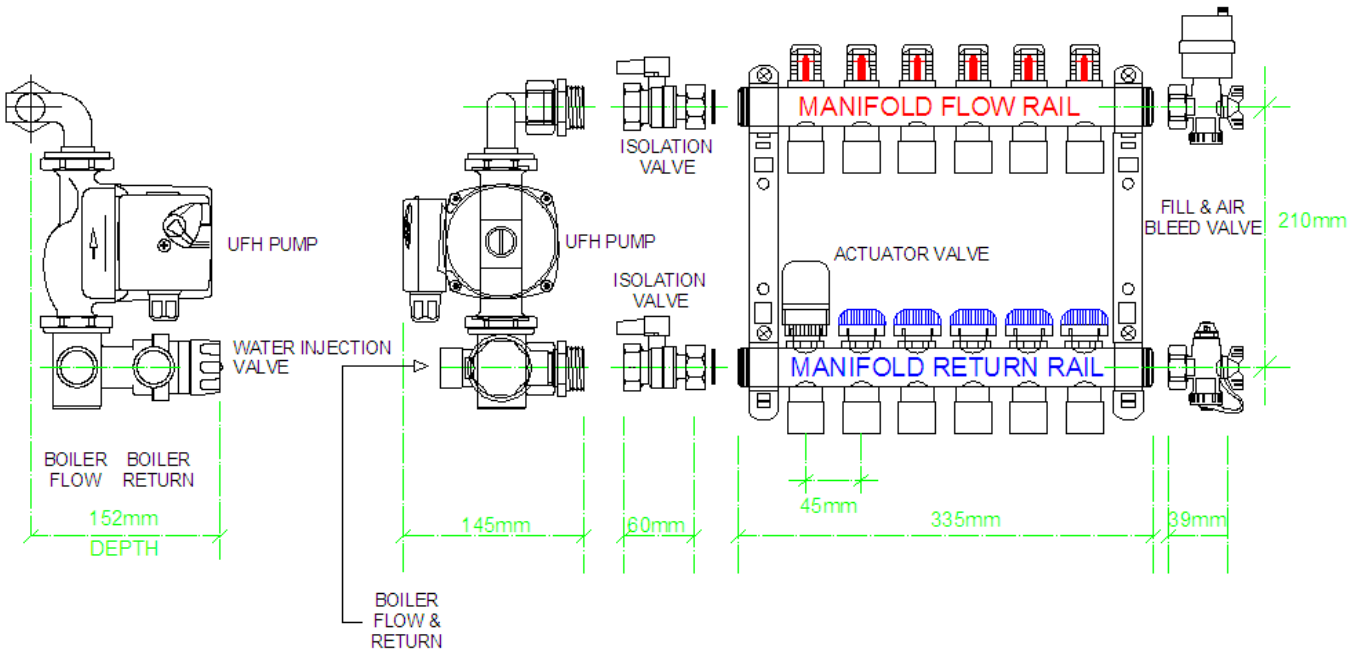
ANNEXE A

A UFH START UP & PRE-COMMISIONING PROCEDURE

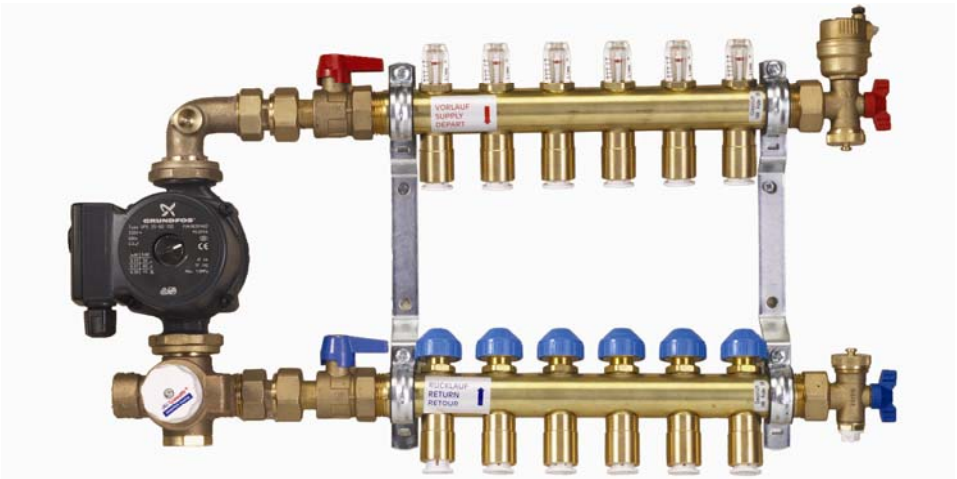
ANNEXE B

B UFH FINAL COMMISSIONING PROCEDURE

TYPICAL 6 PORT MANIFOLD & PUMP PACK INSTALLATION DETAIL



Overall Manifold / Pump Pack Dimensions	
4 Port Manifold	489mm
6 Port Manifold	579mm
8 Port Manifold	669mm
10 Port Manifold	759mm
12 Port Manifold	849mm



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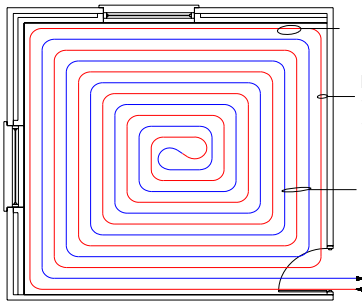
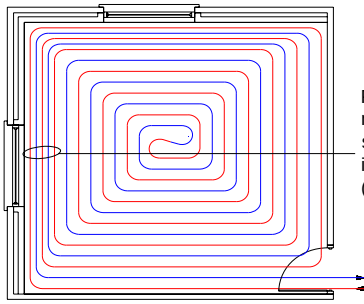
TYPICAL PIPE LAYOUT DETAIL 1 "COUNTERFLOW" PATTERN


Flow pipe laid next to external wall first
Pipe Laid 100mm from face of wall to avoid fixings etc
Pipe Laid @ 200mm centres
UFH Circuit Return
UFH Circuit Flow

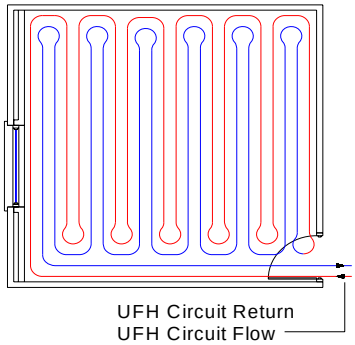
Installation Notes
- Pipe normally laid in floor at 200mm centres.
- Uses only 90° bends which reduces mechanical stress on tube.
- Suitable for any size & shape area.
- Not Suitable for battened floors
- Provides even temperature distribution across flow as flow & returns altenate.

TYPICAL PIPE LAYOUT DETAIL 2 "COUNTERFLOW" PATTERN WITH PERIMETER ZONE.


Perimeter Zone as part of main circuit. Closer pipe spacing of 100mm centres in strip max 1m wide (BSEN1264).
UFH Circuit Return
UFH Circuit Flow

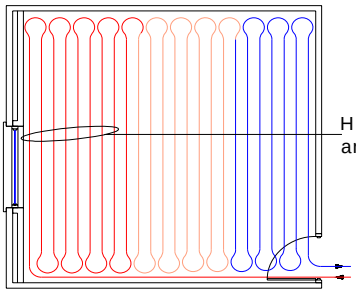
Installation Notes
- As detail 1 other than pipe normally laid in floor at 200mm centres with closer pipe spacing of 100mm at high heatloss areas as determined by design criteria. (refer to manifold installation data sheets supplied with final quote)

TYPICAL PIPE LAYOUT DETAIL 3 "DOUBLE MEANDER"



Installation Notes
- Pipe normally laid in floor at 200mm centres.
- Uses only 90° & 180° bends which requires min 175mm bending radius must be observed to minimise mechanical stress on tube.
- Suitable for large open areas.
- Suitable for battened / screed floors
- Provides relatively even temperature distribution across flow as flow & returns altenate.
- Perimeter zones difficult to achieve if specified.

TYPICAL PIPE LAYOUT DETAIL 4 "SINGLE SERPENTINE / SINGLE MEANDER" PATTERN



Installation Notes
- Pipe normally laid in floor at 200mm centres.
- Uses only 180° bends which requires min 175mm bending radius must be observed to minimise mechanical stress on tube.
- Suitable for any shape / area.
- Suitable for battened / screed floors
- Heat output is concentrated in part of area.
- Perimeter zones difficult to achieve if specified.

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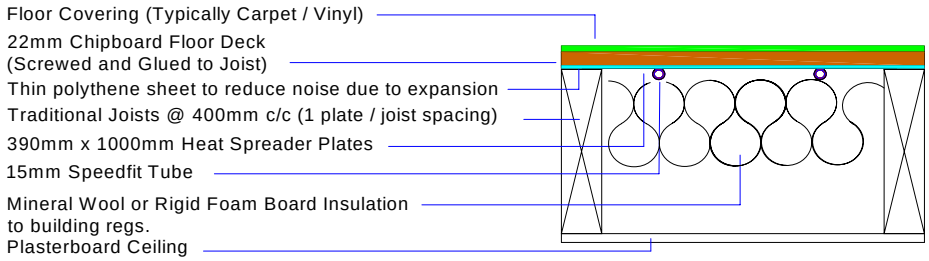
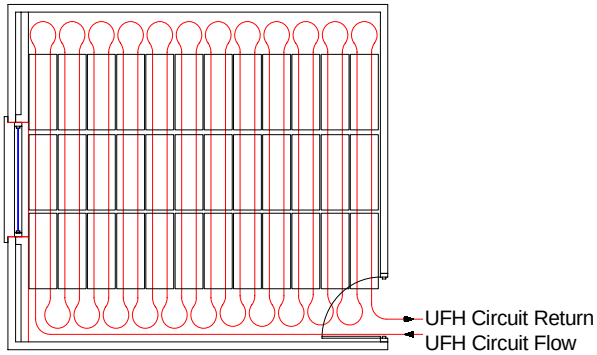
Traditional Joists @ 400mm c/c
Pipe fixed to plates from above.


Floor Covering (Typically Carpet / Vinyl)
22mm Chipboard Floor Deck
(Screwed and Glued to Joist)
Thin polythene sheet to reduce noise due to expansion
Traditional Joists @ 400mm c/c (1 plate / joist spacing)
390mm x 1000mm Heat Spreader Plates
15mm Speedfit Tube
Mineral Wool or Rigid Foam Board Insulation
to building regs.
Plasterboard Ceiling

TYPICAL PIPE LAYOUT FOR TIMBER FLOOR "SINGLE SERPENTINE / SINGLE MEANDER" PATTERN DETAIL 5



Installation Notes

- Pipe laid in floor at 200mm centres.
- Uses only 180° bends which requires min 175mm bending radius must be observed to minimise mechanical stress on tube.
- Suitable for joisted floors @ 400mm.
- Heat output is concentrated in part of area.
- Perimeter zones difficult to achieve if specified.

TYPICAL PLATES FROM ABOVE INSTALLATION

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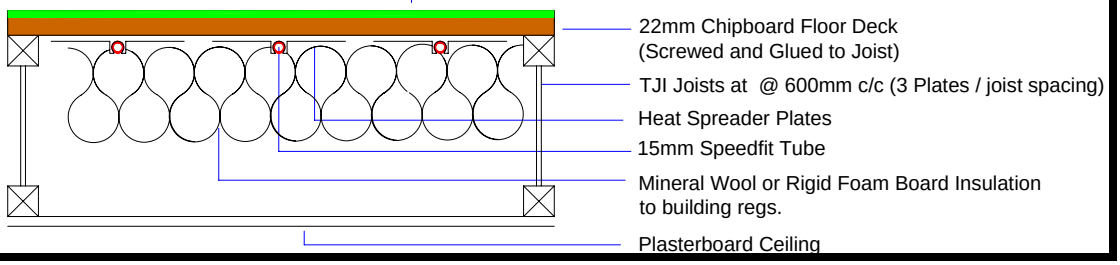
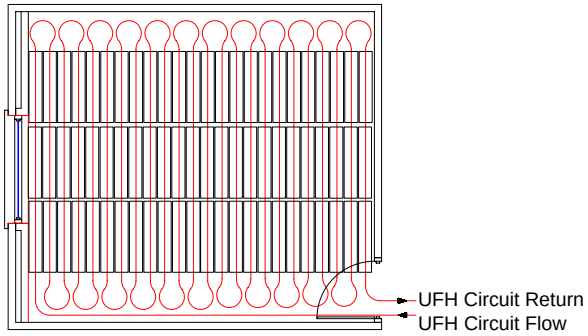
I beam Joists @ 600mm c/c
Pipe fixed to plates from below.


Floor Covering (Typically Carpet / Vinyl)
22mm Chipboard Floor Deck
(Screwed and Glued to Joist)
TJI Joists at @ 600mm c/c (3 Plates / joist spacing)
Heat Spreader Plates
15mm Speedfit Tube
Mineral Wool or Rigid Foam Board Insulation
to building regs.
Plasterboard Ceiling

TYPICAL PIPE LAYOUT FOR TIMBER FLOOR "SINGLE SERPENTINE / SINGLE MEANDER" PATTERN DETAIL 6



Installation Notes

- Pipe laid in floor at 200mm centres.
- Uses only 180° bends which requires min 175mm bending radius must be observed to minimise mechanical stress on tube.
- Suitable for joisted floors @ 400mm & 600mmc/c.
- Heat output is concentrated in part of area.
- Perimeter zones difficult to achieve if specified.

TYPICAL PLATES FROM BELOW INSTALLATION

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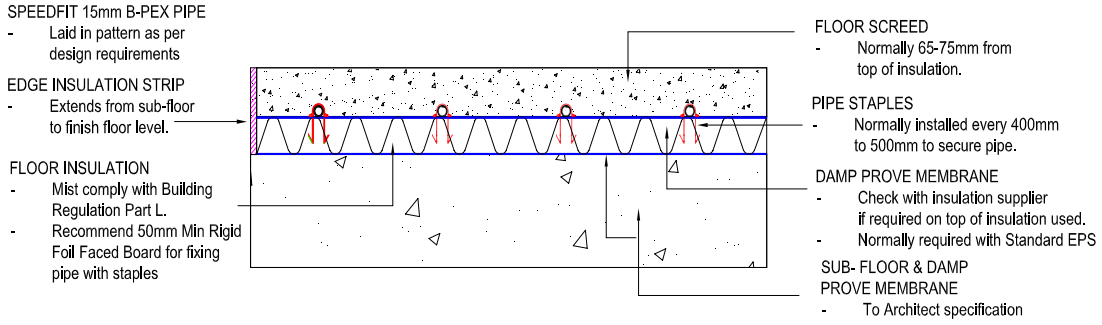
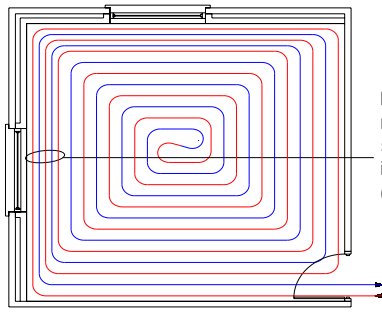
TYPICAL SOLID FLOOR CONSTRUCTION DETAIL


SPEEDFIT 15mm B-PEX PIPE
- Laid in pattern as per design requirements
EDGE INSULATION STRIP
- Extends from sub-floor to finish floor level.
FLOOR INSULATION
- Mist comply with Building Regulation Part L.
- Recommend 50mm Min Rigid Foil Faced Board for fixing pipe with staples
FLOOR SCREED
- Normally 65-75mm from top of insulation.
PIPE STAPLES
- Normally installed every 400mm to 500mm to secure pipe.
DAMP PROVE MEMBRANE
- Check with insulation supplier if required on top of insulation used.
- Normally required with Standard EPS
SUB- FLOOR & DAMP PROVE MEMBRANE
- To Architect specification

TYPICAL PIPE LAYOUT DETAIL 2
"COUNTERFLOW" PATTERN WITH PERIMETER ZONE.



Perimeter Zone as part of main circuit. Closer pipe spacing of 100mm centres in strip max 1m wide (BSEN1264).

UFH Circuit Return
UFH Circuit Flow

Installation Notes

- Pipe normally laid in floor at 200mm centres.
- Uses only 90° bends which reduces mechanical stress on tube.
- Suitable for any size & shape area.
- Not Suitable for battened floors
- Provides even temperature distribution across flow as flow & returns altenate.

TYPICAL COUNTERFLOW INSTALLATION

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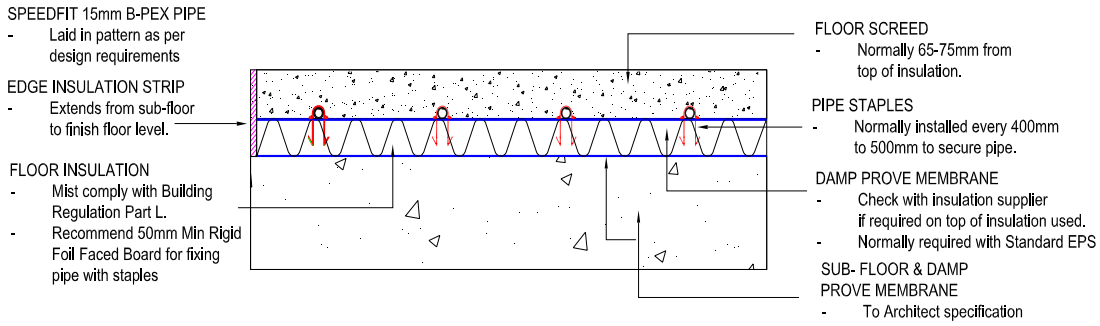
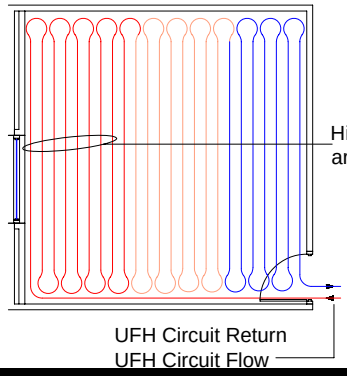
TYPICAL SOLID FLOOR CONSTRUCTION DETAIL


SPEEDFIT 15mm B-PEX PIPE
- Laid in pattern as per design requirements
EDGE INSULATION STRIP
- Extends from sub-floor to finish floor level.
FLOOR INSULATION
- Mist comply with Building Regulation Part L.
- Recommend 50mm Min Rigid Foil Faced Board for fixing pipe with staples
FLOOR SCREED
- Normally 65-75mm from top of insulation.
PIPE STAPLES
- Normally installed every 400mm to 500mm to secure pipe.
DAMP PROVE MEMBRANE
- Check with insulation supplier if required on top of insulation used.
- Normally required with Standard EPS
SUB- FLOOR & DAMP PROVE MEMBRANE
- To Architect specification

TYPICAL PIPE LAYOUT DETAIL 4
"SINGLE SERPENTINE / SINGLE MEANDER" PATTERN



Installation Notes

- Pipe normally laid in floor at 200mm centres.
- Uses only 180° bends which requires min 175mm bending radius must be observed to minimise mechanical stress on tube.
- Suitable for any shape / area.
- Suitable for battened / screed floors
- Heat output is concentrated in part of area.
- Perimeter zones difficult to achieve if specified.

TYPICAL SERPENTINE INSTALLATION

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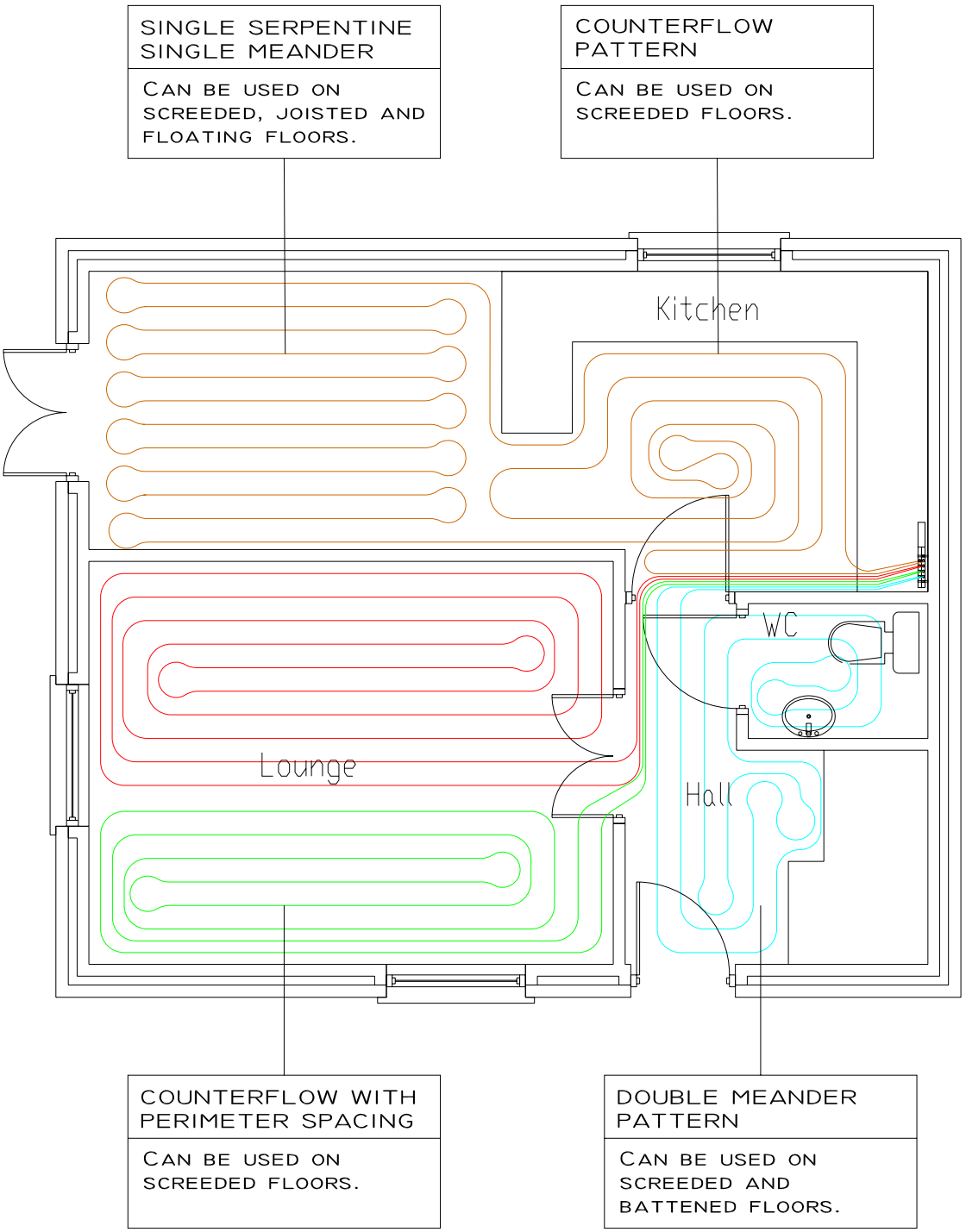
TYPICAL 4 PORT MANIFOLD INSTALLATION



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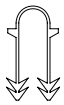
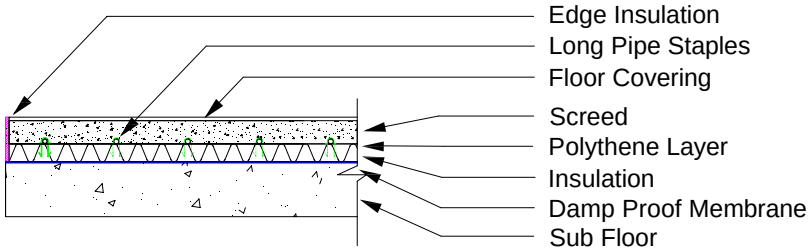
PIPE FIXING APPLICATIONS

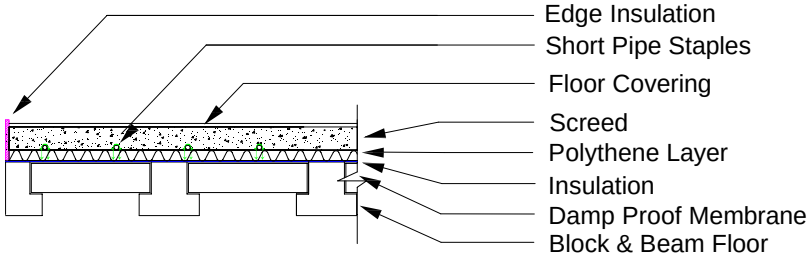
LONG PIPE STAPLE





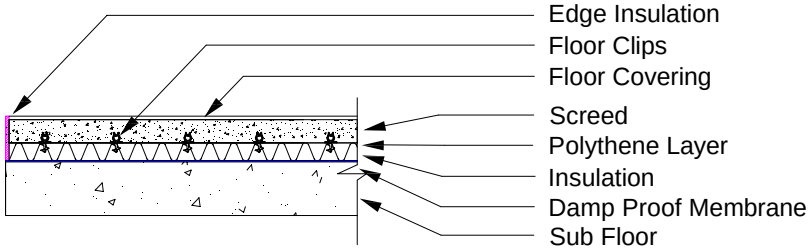
Used for standard UFH screeded Floors, good for large areas and all types of pipe pattern and irregular room shapes.

SHORT PIPE STAPLE



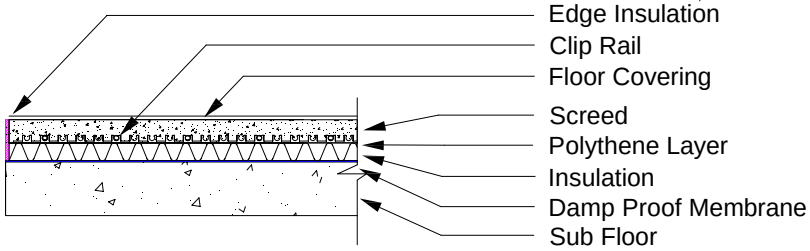
Used for standard UFH screeded Floors, used where there is limited headroom and intermediate floors where insulation can be reduced in depth.

FLOOR CLIP



Used for standard UFH screeded Floors, supplied with the 1 Room Pack, good for small areas with any pipe pattern and 1 person applications.

CLIP RAIL



Used for standard UFH screeded Floors, good for large uniform areas with the serpentine pipe pattern and 1 person applications.

Insulation depth 50mm min. for fixing application or conform to Part L of the building regulations, whichever is greater.

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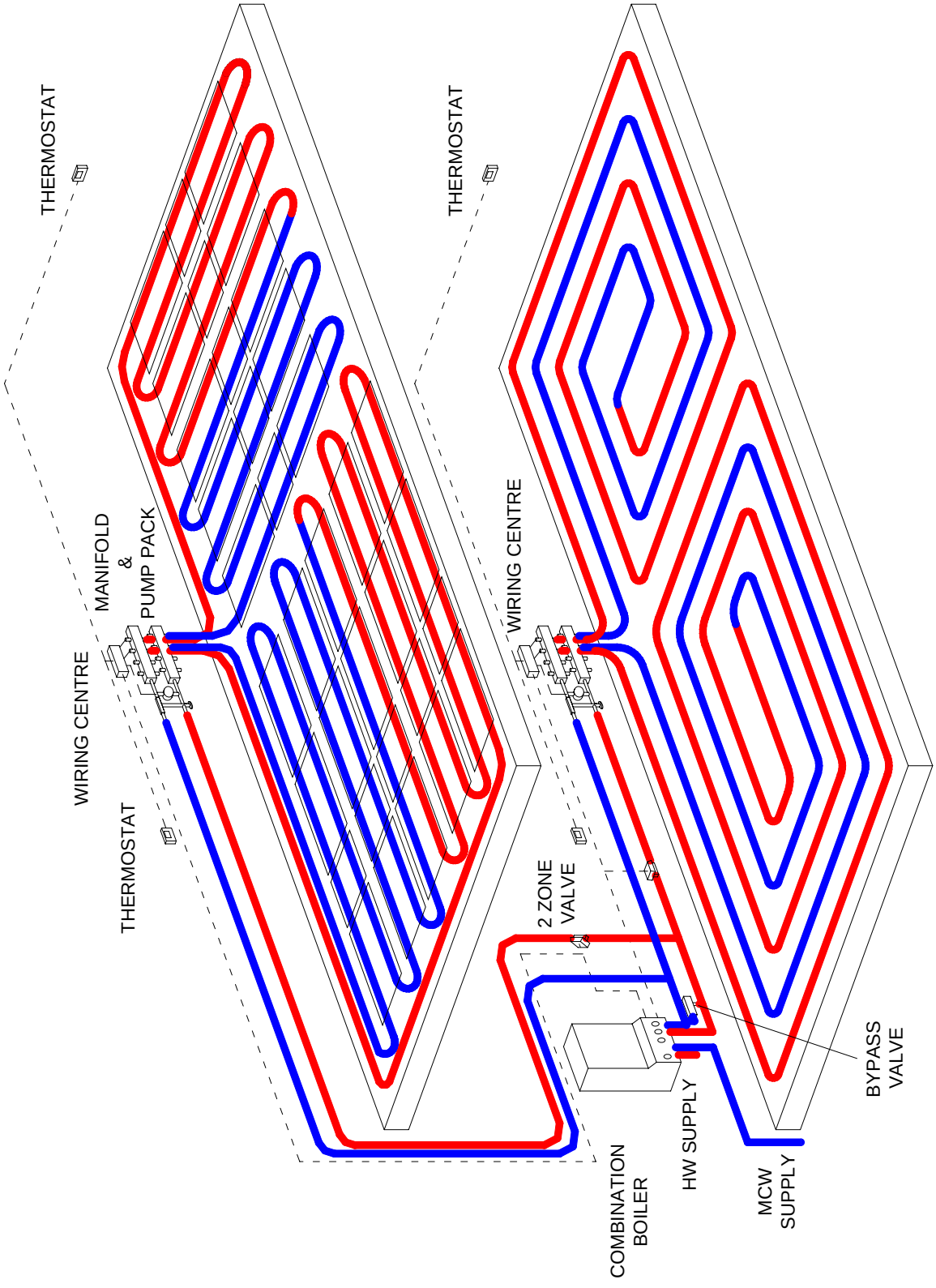
Issue 2 – FEB 07

EXAMPLE GROUND & FIRST FLOOR UFH SYSTEM



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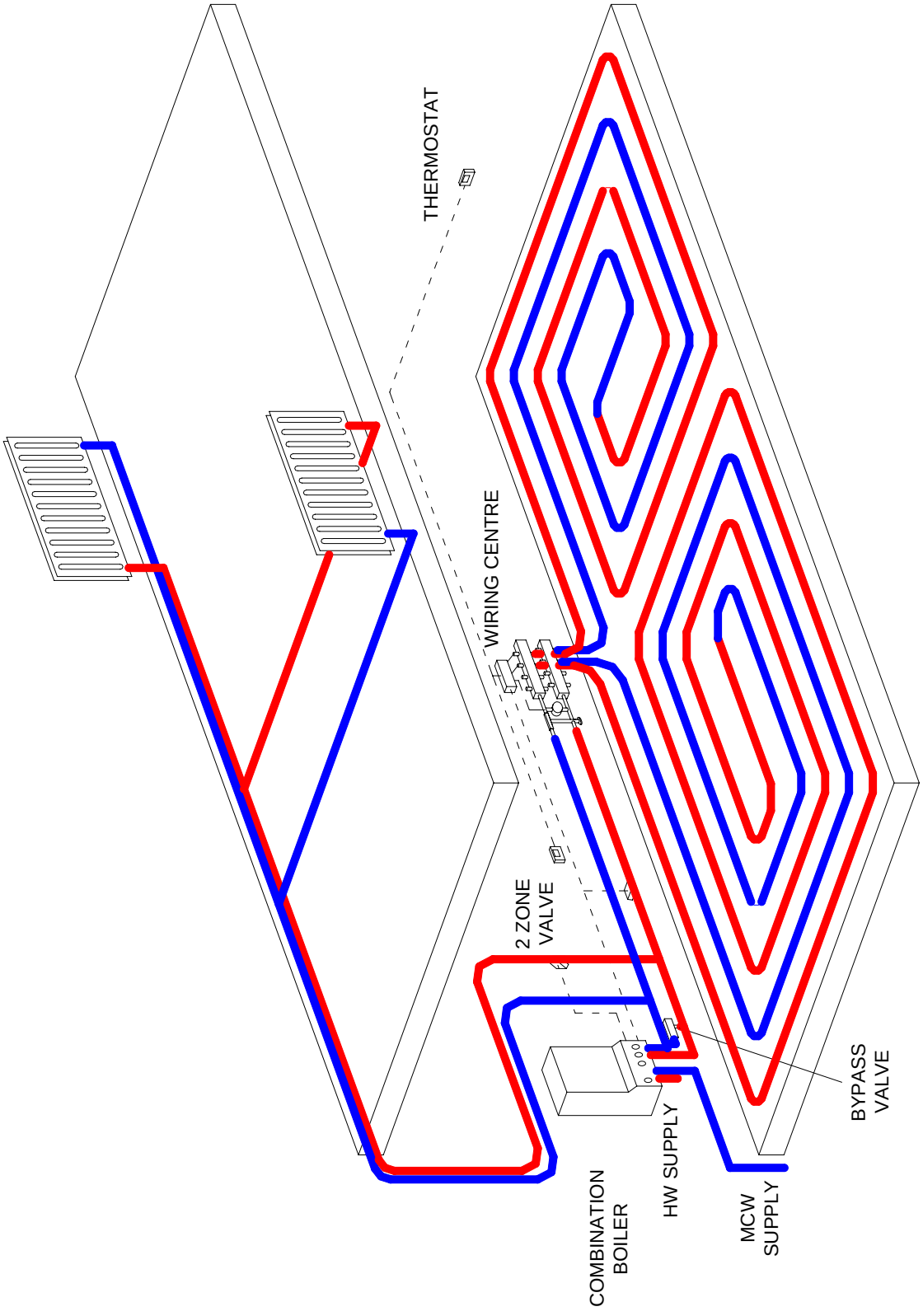
EXAMPLE GROUND FLOOR UFH SYSTEM WITH RADIATOR SYSTEM ON FIRST FLOOR

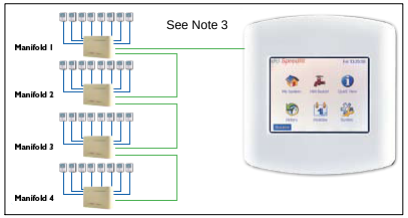


COMBINED HOTWATER & PROGRAMMABLE ROOM THERMOSTAT

PROGRAMMABLE ROOM THERMOSTAT (UFH)

PROGRAMMABLE ROOM THERMOSTAT (RADIATOR /TOWELL RAD CIRCUIT)

JG TOUCHPAD



+ - A1 A2 B1 B2 Y B

+ - A1 A2 Y B

+ - A1 A2 Y B

+ Y C
- B D

8 Core Beldon Cable
12v

8 Core Beldon Cable
12v

8 Core Beldon Cable
12v

3 Amp Fused Spur

230v Mains AC Supply (from common Boiler / or System Spur)

240v

Heat Source

L SL
Boiler Enable

Volt free Switching
Can be used with all boiler types
Max 5 amps

Optional Cylinder Stat

240v

Optional DHW Zone Valve

240v

240v

See Note 1

Optional Zone Valve for additonal heating zone (Towell Rails / Radiators)

See Note 7

MAINS IN L E N
BOILER ENABLE IN OUT
ZONE1 / HW + A1 B1 Y - A2 B2 B
ZONE 2 + A1 Y - A2 B
ZONE 3 + A1 Y - A2 B
ZONE 4 + A1 Y - A2 B
ZONE 5 + A1 Y - A2 B
ZONE 6 + A1 Y - A2 B
ZONE 7 + A1 Y - A2 B
ZONE 8 + A1 Y - A2 B
TOUCHPAD + Y C - B D
NETWORK Y B

See Note 3

FUSE 1
FUSE 3

POWER
WATER
VALVE
PUMP
BOILER

HEATING ZONES
1 2 3 4 5 6 7 8

LOW VOLTAGE FUSE

ON OFF
ZONE 7
ZONE 8

See Note 1

L E N 1 2 OUT IN
HOT WATER CYLINDER VALVE
END SWITCH
HOT WATER CYLINDER THERMOSTAT
ZONE 1 ZONE 2 ZONE 3 ZONE 4 ZONE 5 ZONE 6 ZONE 7 ZONE 8
L E N
MANIFOLD PUMP
1 2
END SWITCH
L E N
MANIFOLD VALVE

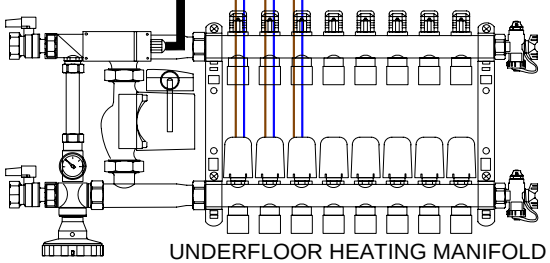
See Note 2

240v

See Note 4

240v to UFH Pump

Optional UFH Zone Valve



UNDERFLOOR HEATING MANIFOLD

Notes

Note 1

When using Zones 7 or 8 for controlling radiator circuits instead of UFH, the switch on the zone must be in the **OFF** position to prevent the UFH pump from operating

This will result in fewer zones being available for UFH.

The Zone Valve is activated by connecting the demand wire (normally brown) to the positive terminal of the appropriate actuator connection as shown.

Note 2

Up to 2 Actuators can be connected to the same terminal. ie max 6 actuators per zone block.

Note 3

Network Connection to Other JGUH1 wiring centres. Boiler Enable to be wired in parallel.

Note 4

Optional UFH Manifold Zone Valve used only to prevent flow of water to manifold when UFH is off and another ciruit is in operation.

If Zone Valve is not used a link needs to be placed between motorised valve connections marked 1 & L to enable boiler firing,

Note 5 - Fuses

Fuse 1
Power Supply (5 Amp)

Fuse 2
Power Supply to LV Transformer
(800ma Time Delay)

Fuse 3
Low Voltage
(800ma Time Delay)

Note 6 - Network Cable

Two Types are available

a) **Cat 5e-ftp**
8 Core Network Cable
(Max 30m Run)

b) **Beldon 9538 Cable (Recommended)**
8 Core Shielded Network Cable
(Max 100m Run)

Note 7

When more than one JGUFH1 is used in an installation the boiler enable terminal must be connected to the boiler from each individual wiring centre.

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Electrical Installtion Helpline 01254 776343

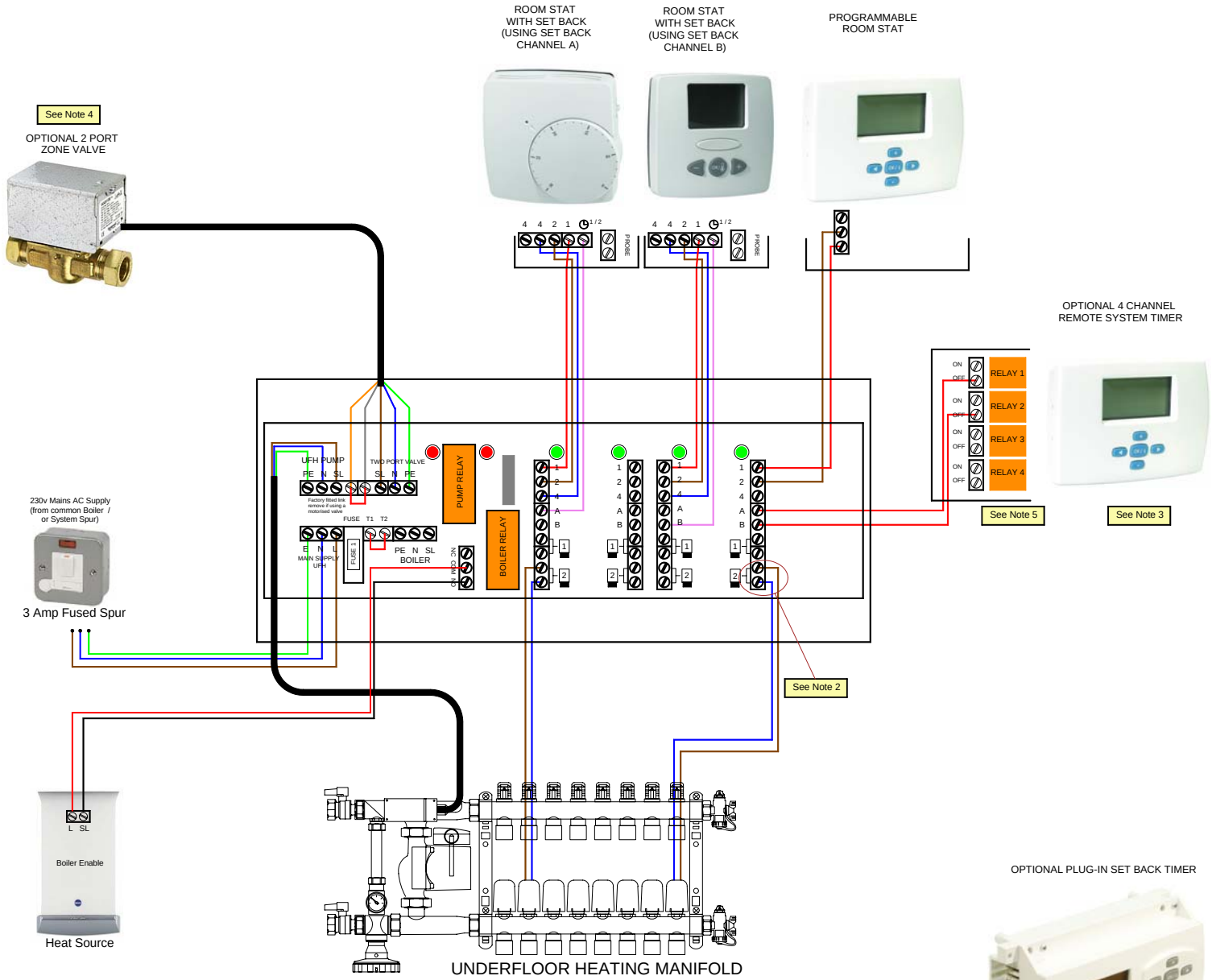
JGUH1 Wiring Diagram 12v

Date : 17-09-08 Issue 3

Drawn By : MCC/NS

Fuses

Fuse 1 Power Supply
2.5A Slow Fuse



Notes

Note 1

Up to 2 Actuators can be connected to the same terminal. ie max 4 actuators per zone block.

Note 2

Programmable Room Stats

Battery powered (3 x AA). Requires only 2 wires to connect to wiring centre.

Programmable Room Stats can be used together with Set-Back Stats on the same system.

Note 3

Set Back Control

Option 1
Plug-in Centralised System Timer

Plugs directly into wiring centre & offers 2 time set-back/low temperature time channels (Channel A & B)

Option 2
Remote System Timer

Hard wires into wiring centre time channel A/B as per diagram.

When a time channel is activated , this causes any Set-back thermostats connected to that channel to operate at 4°C lower than the temperature set on the stat.

The overall result is an automatic reduction in room temperature during the times programmed by the user.

Note 4

Optional UFH Manifold Zone Valve used only to prevent flow of water to manifold when UFH is off and another ciruit is in operation.

If Zone Valve is not used a link needs to be placed between end switch connections marked 1 & 2 to enable boiler firing,

Note 5

4 Channel Remote System Timer

Any free time channel not used as per **Note 3** can be used to provide time control for DHW or radiator / towel rail circuits.

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Wiring Diagram
230v 4 Zone Master Wiring Centre

Date : 01-11-08 Issue 3

Drawn By : MCC/NS

Underfloor Heating System Start-up & Pre-Commissioning Procedure

Issue 2 - Jan 2005

With reference to British Standard EN 1264 and CIBSE Recommendations

BS EN 1264 requires the leak test and initial heat up to be recorded and documented. This form is designed for this purpose and will also act as quality checking devise to assist in any future queries.

A. Project Details

Client	
Project / Area / Room	

B. Testing for leaks

All heating pipe circuits of the underfloor system are to be hydraulically wet tested for water leaks before screeding is allowed to commence (BSEN 1264 :part 4 Para 4.3).
Testing should be completed in 2 stages. Firstly at 2 Bar for 10 minutes following by 10 Bar for a further 10 minutes. This testing, combined with visual and other relevant checks, should reveal installation problems and is regarded as good plumbing practice.

It is important that all pipe circuits remain under pressure (normally 3-6 bar) during the screed laying and curing process and every effort should be made to protect the pipework from damage (BSEN1264 Part 4 Para 4.3).

Test pressure used _____ bar **Test Duration Used** _____ hrs/min

Were any leaks present ? (if yes, please state action taken) YES NO

_____

C. Heating-Up Conditions of the Floor Heating System (EN 1264 Part 4, Para 4.4)

This function has to be carried out on all heated floors. For Solid Floors with Cement screeds this must wait until 21 days have elapsed after the screed has been laid. In the case of Anhydrite or Calcium Sulphate screeds the elapsed time shall be only 7 days from the date of laying.
(Confirm this using the screed manufacturers' information).

Confirm Screed type Cement screed ☐ Anhydrite (calcium sulphate) ☐
Special Screed type Polymer Modified ☐ Asphalt (45°C max) ☐

Date on which Screed Laying completed _____

Date of the Initial Heating-Up procedure
(Flow water temperature set at 25 ºC for 3 days) _____

Confirm Maximum Design Flow temperature (ºC)
Check manufacturers' specifications for information, which could affect the maximum temperature (e.g. for floating floors etc). _____

Date when Maximum Flow temperature was set
(To be maintained for 4 days at this level) _____

External Temperature
The prevailing outside temperature during the warm-up was _____ ºC

C. Initial Heating-Up Procedure of the Floor Heating System (EN 1264 Part 4, Para 4.4)

The warm up procedure should be carried out using natural infiltration and after switching-off all other heating, all external doors and windows should be closed.

1. Ensure all heating circuits are filled with cold water and vent the system well using the standard radiator style vents on the JG Manifold.

2. Fully close the JG Pump pack valve by turning the hand wheel clockwise.

3. Switch on the pump by turning all room thermostats to maximum.

4. Set the flow rate in the underfloor heating circuit to 4 l/min by adjusting the flow gauges on the manifold.

5. Set the temperature limiter thermostat to 35°C (10°C above the initial target flow temperature of 25 ºC)

6. Gradually open the Pump pack valve by turning the hand wheel anti-clockwise while monitoring the flow temperature on the thermometer. This process may take approx. 10 minutes to commence in order to take the inertia of the thermometer into account.

7. Gradually open the valve until the target flow temperature of 25 ºC is reached. It should be noted that until the flow temperature reaches 47ºC, when the automatic injection valve takes over, the controller only operates mechanically in the lower temperature range (25 ºC - 47ºC).
   In other words, the flow temperature of the boiler must be constant (opening the valve limits the flow rate in terms of volume and not temperature-dependent).
   Use of the temperature limiter is essential (for safety reasons)

8. After the initial temperature is reached adjust the flow rate in the underfloor heating circuit to 2 l/min

9. The initial water flow temperature shall be maintained at 25ºC for 3 days.

10. On the 4th day the temperature can be increased gradually in increments of 5ºC/day until the maximum design temperature is reached and must be maintained for a further 4 days at maximum design flow temperature. Adjusting the hand wheel anti-clockwise does this. The overheat thermostat should also be adjusted at this time to maintain a 10ºC difference. ie when the flow temperature is 40ºC the safety thermostat should be set at 50ºC.

11. When completed Speedfit recommend the room thermostats are adjusted to desired working levels and the system operated normally for approx 2 weeks until final balancing, commissioning and setting of circuit flow rates is carried out.

If Initial heating-up process was interrupted give details?

_____

Please confirm the warm-up procedure was carried out in accordance with above by counter signing below.

	Name (Print)	Name (Signature)	Date
Installer			
Client / Clients Representative			
JG Speedfit (if present)			

JG Speedfit
John Guest Speedfit Limited
Horton Road, West Drayton, Middlesex UB7 8JL, England
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Speedfit Underfloor Heating

Issue 2 - Jan 2005

Underfloor Heating System Final Commissioning Procedure

With reference to British Standard EN 1264 and CIBSE Recommendations

Customer _____

Project No. _____

Project Address _____

Date _____

System Checks - (To be completed for each manifold)

1	Final commissioning is required to ensure that the system will meet the design specification and meet the requirements of the Building regulations. This procedure should only be carried out by a competent person and only after the system has been running for a period in order to allow the floors to dry out and settle. **The pre-commisoning and start-up procedure should have been carried out before final commissioning**. All building work should be complete and all window, doors etc should be closed and all boiler, electrical and plumbing safety checks should have been completed by a competent person before commencing commissioning. If floor coverings have been laid then these should be checked against the design specification as there are occasions when coverings with high thermal resistance can result in design temperatures being unobtainable.		
2	Visually inspect the installation including floor, components and manifold assembly and check that the primary boiler flow and returns are correctly connected. Make a note on this form of any items which need further investigation or remedial action. Check with the responsible person that the Boiler is installed and working and that the system has been made safe to inspect. If there is any doubt about the safety of the system, the wiring or any other part of the installation do not proceed with commissioning and report your findings to the appropriate person/authority. **Remember all electrical work must be carried out in accordance with the Building regulations and IEE regulations.**		YES / NO
3	Start the system and Confirm Time Clock(s) / Programmer(s) are calling for Heat.		YES / NO
4	Check All rooms stats are initially set to 20°C		YES / NO
5	Check all floor thermostats, (if installed are set to 25°C to 30°C initially)		YES / NO
6	Turn on each room stat to its maximum setting and check that when any room stat calls actions a) to d) occur:- If answer is no to any of these questions, then the electrician should check for electrical wiring for faults using the fault finding guide supplied with the electrical info pack.	a) Is the boiler thermostat set correctly.	YES / NO
		b) If fitted ,does the Zone Valve Operate	YES / NO
		c) Does the boiler fire & system pump operate	YES / NO
		d) Is supply hw available at the manifold	YES / NO
		e) Does the UFH Pump begin to operate	YES / NO
7	Check that circuit actuators are opening. This can be done by visually checking to see if a red marker is visible and if a flow can be seen on the flow gauge.		YES / NO

8 Confirm the flow temperature on the pump pack is reading the design temperature. (The system should be given at least 2-hours to achieve if starting from cold)

°C | |

This design temperature for each manifold can be found on the Design & Installation Data Sheet supplied by the JG Speedfit Design Office. Please call our technical helpline for copies of these details prior to installation.

Manifold 1 - Design & Installation Data

Design Data

Total Heated Area	85	m²	Manifold Flow Temperature	55	°C
Total Heat Demand	6790	W	Max Circuit Pressure Loss	26	kpa
Total Output of UFH	7120	W	System Water Content	56	litres
Total Required Input (from Boiler)	8188	W	Screed Depth	65	mm

9 If the actual temperature is different to the design temperature, then record this here before any further adjustment using the hand wheel. You should expect a time lag for any changes to occur.

°C | |

10 **With all zones calling for heat, record the actual flow rates in each circuit in the table below. This should be done before any further adjustment is made, working from left to right on the manifold.**

Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)
1		2		3		4		5		6	
7		8		9		10		11		12	

11 Record the flow rates specified on the design sheets in the table below.

This design temperature for each manifold can be found on the Design & Installation Data Sheet supplied by the JG Speedfit Design Office. Please call our technical helpline for copies of these details prior to installation.

Installation Data

Area Ref	Area Name	Manifold Circuits Ref	Room Stat Zone	Floor Type	Pipe Fixing	Floor Covering & Resistance Value	Pipe Spacing Dist.	Pipe Circuits	Avg Loop Length (m)	Circuit Flow Rate (l/m)	Se
101	Hall/WC	1&2	A	Screed on insulation	Staples	Carpet (0.15)	200	2	52.0	2.6	
102	Dining	3&4	B	Screed on insulation	Staples	Carpet (0.15)	200	2	62.0	2.9	
103	Lounge	5 to 8	C	Screed on insulation	Staples	Carpet (0.15)	200	4	66.0	2.9	

Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)	Circuit (No)	Flow (m/s)
1		2		3		4		5		6	
7		8		9		10		11		12	

12 Working from left to right on the manifold, adjust the flow rate of each circuit in turn until the correct flow rate is met in table above. The method for this is shown on the leaflet supplied with the manifold. When a full pass has been made along the manifold it may be necessary to make further minor adjustments to individual circuits.

YES | NO

13 Recheck the manifold water flow temperature and adjust as necessary. Remember, adjustments to the temperature may take a little time to be seen in the system.

YES | NO

14 Check all valves and flow meters are functioning and no leaks are present if any valves have been adjusted.

YES | NO

15 With the system running, check with the aid of an info red thermometer that the average floor surface temperatures to not exceed 29°C, except in areas round the manifold or in areas noted on the design drawings which show the use of perimeter zones where pipes have smaller centres. These areas should not generally be greater that 35°C (BSEN1624). The average floor surface design temperatures can also be checked. Remember, results will depend on whether the specified floor covering is installed.

YES	NO

The design flow surface temperatures for each zone are shown on the Manifold Installation sheet supplied with the full design package. (An indication of the presence on perimeter zone spacing is also shown and denotes areas of higher floor temperatures). Remember, the floor finish will have an effect of floor temperatures.

	Circuit Flow Rate (l/m)	Floor Surface Temp (°C)	Notes
0	2.8	27.6	Approx 1 m² of perimeter zone piping @ 100mm centres(max 1m wide strip BSEN1264)
0	2.9	27.6	Approx 3 m² of perimeter zone piping @ 100mm centres(max 1m wide strip BSEN1264)
0	2.9	27.6	Approx 7 m² of perimeter zone piping @ 100mm centres(max 1m wide strip BSEN1264)

16 Once all checks have been completed and the system is working correctly, the commissioning engineer should ensure that the user has been made aware of how the system operates and how to, set the room thermostats and time controls. The user should be left with a copy of the installation drawing, installation instructions together with the commissioning and user documentation for their records.

YES	NO

Installer Details

17

Name _____

Address _____

_____

Contact Number _____

Signature _____ Date _____

Commissioning Engineer Details

18

Name _____

Address _____

_____

Contact Number _____

Signature _____ Date _____

JG Speedfit Representative (if Present)

19

Name _____

Address _____

_____

Contact Number _____

Signature _____ Date _____